

IN THE CLAIMS:

1. (Previously Presented) An optoelectronics device, comprising:
a doped layer; and
a dopant barrier located between said doped layer and a layer, wherein said dopant barrier includes at least two layers and does not form a pn junction with said doped layer.
2. (Original) An optoelectronic device as recited in claim 1, wherein said at least two layers further comprise a first dopant barrier layer and a second dopant barrier layer.
3. (Original) An optoelectronic device as recited in claim 2, wherein said layer is a current confinement layer.
4. (Original) An optoelectronic device as recited in claim 1, wherein said layer is a substrate.
5. (Original) An optoelectronic device as recited in claim 3, wherein said first dopant barrier layer is adjacent said current confinement layer and said second dopant barrier layer is adjacent said doped layer.
6. (Original) An optoelectronic device as recited in claim 5, wherein said first dopant barrier layer is n-InP and said second dopant barrier layer is undoped InAlAs.

7. (Original) An optoelectronic device as recited in claim 6, wherein said current confinement layer is InP(Fe).

8. (Original) An optoelectronic device as recited in claim 1, wherein said layer is undoped InAlAs.

9. (Original) An optoelectronic device as recited in claim 3, wherein said current confinement layer is disposed on either side of a mesa.

10. (Original) An optoelectronic device as recited in claim 1, wherein said doped layer is a substrate and said layer is a semi-insulating layer.

11. (Previously Presented) An optoelectronics device, comprising:
a mesa having a substrate, a first dopant barrier having at least two layers disposed over said substrate; and

at least one layer disposed over said first dopant barrier, said first dopant barrier not forming a p-n junction with said substrate or said at least one layer.

12. (Original) An optoelectronic device as recited in claim 11, wherein a second dopant barrier is disposed between said mesa and a current confinement layer.

13. (Original) An optoelectronic device as recited in claim 12, wherein said second dopant barrier further comprises a first layer and a second layer.

14. (Original) An optoelectronic device as recited in claim 12, wherein said first layer is adjacent said current confinement layer and said second layer is adjacent said mesa.

15. (Original) An optoelectronic device as recited in claim 14, wherein said second layer does not form a pn junction with said substrate of said at least one layer.

16. (Original) An optoelectronic device as recited in claim 11, wherein said one of said at least two layers is undoped InAlAs.

17. (Original) An optoelectronic device as recited in claim 12, wherein said second dopant barrier includes a layer of InAlAs.

18. (Original) An optoelectronic device as recited in claim 12, wherein said second dopant barrier includes a layer of n-InP.

19. (Original) An optoelectronic device as recited in claim 12, wherein said current confinement layer is InP(Fe) and one of said at least one layers is p-doped InP.

20. (Original) An optoelectronic device as recited in claim 19, wherein said p-doped InP is doped with Zn.